



SEQUENCE LISTING

<110> Weiner, Amy J
Houghton, Michael

<120> Conserved Motif of Hepatitis C Virus E2/NS1 Region

<130> PP000938.0105

<140> 08/823,980
<141> 1997-03-25

<150> 08/757,958
<151> 1996-11-25

<150> 08/061,699
<151> 1993-05-12

<160> 134

<170> PatentIn version 3.3

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<222> (1)..(1)
<223> Represents Ala, Arg, Asp, Gly, Lys, Ser, or Thr.

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<223> Represents Ile, Leu, Met, Phe, or Trp.

<220>
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<223> Represents Leu or Phe.

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<223> Xaa can be any naturally occurring amino acid

<220>
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Xaa Xaa Xaa Xaa Xaa Xaa
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<223> 2,3-diaminopropionic (Dpr) acetyl cysteine

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<223> 2-amino heptanoic (Ahe) butyl alanine

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Gly Phe Val Ser Leu Leu Ala Pro Gly Ala Lys Gln Asn Val Gln Leu
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<400> 3

Val Ser Leu Leu Ala
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Ser Leu Leu Ala Pro Gly Ala
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Leu Ala Pro Gly Ala

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Xaa Ser Leu Phe Xaa Xaa Gly Xaa Ser Gln Xaa Ile Gln Leu Ile
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<400> 9

Ala Thr Tyr Ala Thr Gly Ala Ala Gln Gly His Ala Thr Asn Ser Phe
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Val Ser Leu Phe Arg Ser Gly Ala Ser Gln Asn Leu Lys Leu Val
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<400> 10

Ser Thr Gln Val Thr Gly Gly Gln Ala Ala His Thr Val Arg Gly Val
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Ala Ser Ile Phe Ser Pro Gly Ser Arg Gln Asp Ile Ser Leu Ile
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<400> 11

Ser Thr Arg Val Thr Gly Gly Gln Gln Gly Arg Ala Val His Gly Ile
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Ala Ser Leu Phe Ser Leu Gly Ala Ser Gln Lys Ile Gln Leu Val
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Ser Thr His Val Met Gly Ala Gln Gln Gly Arg Val Ala Lys Gly Phe
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Thr Ser Leu Phe Gly Pro Gly Pro Ala Gln Lys Ile Gly Leu Ile
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<400> 13

Ser Thr His Val Thr Gly Ala Val Gln Gly His Ser Ile Arg Gly Leu

1 5 10 15

Thr Ser Leu Phe Thr Ser Gly Pro Ala Gln Lys Ile Gln Leu Val
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<400> 14

Glu Thr His Val Thr Gly Gly Ile Ala Ala Lys Thr Thr Ala Ser Leu
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Thr Gly Leu Phe Asn Leu Gly Ala Lys Gln Asn Ile Gln Leu Ile
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Gln Thr Arg Val Thr Gly Gly Thr Ala Ala Gln Ser Thr Ala Arg Ile
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<400> 17

Gln Thr His Val Met Gly Gly Thr Ala Gly Arg Asn Ala Tyr Gly Leu
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Ala Ser Leu Phe Thr Ser Gly Pro Ala Gln Lys Ile Gln Leu Val
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Ser Lys Leu Phe Met Pro Gly Ala Ser Gln Asn Ile Gln Leu Ile
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<400> 20

Gly Thr Thr Arg Val Gly Gly Ala Ala Ala Arg Thr Thr Ser Ser Phe
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Ala Ser Leu Leu Thr His Gly Pro Ser Gln Asn Ile Gln Leu Val
20 25 30

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<400> 21

Gly Thr His Val Thr Gly Gly Ala Ala Ala Arg Asp Ala Phe Arg Phe
1 5 10 15

Ser Ser Leu Phe Thr Arg Gly Pro Ser Gln Asn Ile Gln Leu Ile
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<400> 22

Ala Thr Asn Met Thr Gly Gly Ala Pro Ala Arg Thr Thr Tyr Lys Leu
1 5 10 15

Thr Thr Leu Phe Ser Tyr Gly Ala Ser Gln Lys Ile Gln Leu Ile
20 25 30

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<400> 23

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20 25 30

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<400> 24

Gly Thr His Val Thr Gly Gly Ala Ala Ala Arg Asn Ala His Ser Leu
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Thr Ser Leu Leu Ala Pro Gly Ala Ser Gln Lys Ile Gln Leu Ile
20 25 30

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<400> 25

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Thr Ser Leu Phe Ser Pro Gly Pro Arg Gln Asn Ile His Leu Val
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<400> 26

Thr Thr His Val Ser Gly Gly Thr Ala Gly Arg Thr Thr Ala Ser Leu
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Thr Ser Phe Phe Ala Pro Gly Ala Ser Gln Arg Ile Gln Leu Val
20 25 30

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<400> 27

Thr Thr His Val Thr Gly Gly Ala Thr Gly His Thr Thr Ser Gly Ile
1 5 10 15

Ala Ser Leu Phe Leu Pro Gly Ala Ser Gln Lys Ile Gln Leu Ile
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<400> 28

Asp Thr Tyr Ala Ser Gly Gly Ala Gln Gly Arg Ser Thr Leu Gly Phe
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Thr Ser Leu Phe Thr Pro Gly Ala Ser Gln Lys Ile Gln Leu Ile
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Asp Thr Tyr Ala Ser Gly Gly Ala Ala Gly Arg Ala Thr Tyr Gly Ile
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Thr Ser Leu Phe Ala Pro Gly Ala Ser Gln Asn Ile Gln Leu Ile
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<400> 30

Arg Thr Tyr Ala Ser Gly Gly Ala Ala Gly Arg Thr Thr His Gly Phe
1 5 10 15

Thr Ser Leu Phe Ser Thr Gly Ala Arg Gln Asn Ile Gln Leu Ile
20 25 30

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<400> 31

Gln Thr Tyr Val Thr Gly Gly Lys Ala Ala Gln Thr Val Ser Gly Phe
1 5 10 15

Thr Gly Leu Phe Ser Ser Gly Pro Ser Gln Lys Ile Gln Leu Ile
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<400> 32

Asp Thr Tyr Val Ser Gly Gly Ala Ala Ala Arg Ser Ile Ser Gly Phe

1 5 10 15

Thr Ser Leu Phe Thr Pro Gly Ala Ser Gln Lys Ile Gln Leu Val
 20 25 30

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<400> 33

Ser Thr Tyr Val Thr Gly Gly Glu Ala Ser Arg Thr Thr Arg Gly Phe
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Ala Ser Leu Phe Thr Leu Gly Ser Ser Gln Lys Ile Gln Leu Ile
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<400> 34

Asn Thr Tyr Val Thr Gly Gly Ser Ala Gly Arg Ala Val Ala Gly Phe
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Ala Gly Leu Leu Gln Pro Gly Ala Lys Gln Asn Val Gln Leu Ile
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<400> 35

His Thr Arg Val Thr Gly Gly Gln Val Ala Phe Arg Thr His Gly Leu
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Val Ser Leu Phe Thr Gln Gly Pro Ser Gln Lys Ile Gln Leu Val
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<400> 36

His Thr His Val Thr Gly Gly Arg Val Ala Ser Ser Thr Gln Ser Leu
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Val Ser Trp Leu Ser Gln Gly Pro Ser Gln Lys Ile Gln Leu Val
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<400> 37

His Thr Arg Val Thr Gly Gly Val Gln Gly His Val Thr Ser Thr Leu
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Thr Ser Leu Phe Arg Pro Gly Ala Ser Gln Lys Ile Gln Leu Val
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<400> 38

Asn Thr Arg Val Thr Gly Gly Val Gln Gly Arg Asp Thr Ser Gly Leu
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Val Ser Leu Phe Ser Leu Gly Pro Ser Gln Lys Ile Gln Leu Val
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<400> 39

Asp Thr His Val Thr Gly Gly Ala Gln Ala Lys Thr Thr Asn Arg Leu
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Val Ser Met Phe Ala Ser Gly Pro Ser Gln Lys Ile Gln Leu Ile
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<400> 40

Glu Thr His Val Thr Gly Gly Ala Ser Ala Arg Thr Thr Gln Arg Phe
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Thr Thr Tyr Met Thr Gly Gly Ala Asn Ala Arg Thr Thr Gln Gly Phe
1 5 10 15

Val Ser Leu Phe Thr Pro Gly Pro Ala Gln Lys Ile Gln Leu Val
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<400> 42

Glu Thr His Val Thr Gly Gly Thr Ser Ala Arg Thr Thr Gln Gly Phe
1 5 10 15

Val Ser Leu Phe Ser Ala Gly Ala Ser Gln Lys Ile Gln Leu Val
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<400> 43

Gly Thr His Val Thr Gly Gly Gln Ala Ala Arg Thr Thr Gln Ser Phe
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Thr Ser Leu Phe Ser Pro Gly Pro Gln Gln Lys Ile Gln Leu Ile
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<400> 44

Arg Thr His Val Thr Gly Gly Lys Ala Ala His Thr Thr Lys Gly Phe
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Ala Ser Leu Phe Thr Pro Gly Pro Ser Gln Asn Ile Gln Leu Ile
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<400> 45

Glu Thr Arg Val Thr Gly Ala Val Gln Gly His Gly Ala Leu Gly Leu
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Ala Ser Leu Phe Thr Pro Gly Pro Ser Gln Lys Ile Gln Leu Ile
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<400> 46

Glu Thr Arg Val Thr Gly Ala Ile Ala Gly Arg Thr Ala Ser Ser Phe
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Ala Gly Leu Phe Thr Ser Gly Ala Ser Gln Lys Ile Gln Leu Val
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<400> 47

Glu Thr Arg Val Thr Gly Gln Gln Val Gly Arg Thr Thr Gln Ser Leu
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Thr Ser Leu Phe Thr Pro Gly Pro Ser Gln Thr Ile Gln Leu Ile
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<400> 48

Gln Thr Arg Val Thr Gly Ala Gln Val Gly Arg Thr Thr Ser Ser Leu
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Thr Ser Leu Phe Thr Pro Gly Pro Ser Gln Asn Ile Gln Leu Val
20 25 30

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<400> 49

Arg Thr Gln Val Thr Gly Ala Gln Ala Gly His Thr Thr Ser Gly Leu
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Ala Ser Leu Phe Thr Pro Gly Pro Ser Gln Lys Ile Gln Leu Val
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<400> 50

Glu Thr His Val Thr Gly Gly Ser Ala Gly His Thr Val Ser Gly Phe
1 5 10 15

Val Ser Leu Leu Ala Pro Gly Ala Lys Gln Asn Val Gln Leu Ile
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<400> 51

Glu Thr His Val Thr Gly Gly Ser Ala Gly His Thr Val Thr Gly Ile

1 5 10 15

Ala Ser Leu Phe Thr Ser Gly Ala Lys Gln Asn Ile Gln Leu Ile
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<400> 52

Ser Thr His Val Thr Gly Gly Thr Ala Ala His Thr Val Ala Gly Phe
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Ser Ser Leu Phe Thr Val Gly Pro Lys Gln Asn Ile Gln Leu Ile
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Ala Ser Leu Phe Thr Ser Gly Ala Lys Gln Asn Ile Gln Leu Ile
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<400> 54

Glu Thr His Val Thr Gly Gly Ser Ala Gly Arg Thr Thr Ala Gly Leu
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Val Gly Leu Leu Thr Pro Gly Ala Lys Gln Asn Ile Gln Leu Ile
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<400> 55

Gly Thr His Val Thr Gly Gly Ser Ala Gly Arg Ala Thr Ala Gly Ile
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Ala Gly Leu Leu Thr Pro Gly Ala Arg Gln Asn Ile Gln Leu Val
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<400> 56

Lys Thr His Val Thr Gly Gly Ser Ala Ala Arg Thr Thr Ser Gly Ile
1 5 10 15

Ala Ser Leu Leu Thr Pro Gly Ala Lys Gln Asn Val Gln Leu Ile
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<400> 57

Lys Thr Tyr Val Thr Gly Gly Ser Gln Ala Gln Ala Thr Phe Gly Phe
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Thr Ser Leu Leu Gln Gln Gly Ala Lys Gln Asn Ile Gln Leu Ile
20 25 30

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<400> 58

Glu Thr Thr Val Thr Gly Gly Ser Ala Ala His Gly Ala Leu Gly Ile
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Ala Ser Leu Phe Asn Gln Gly Ala Arg Gln Asn Ile Gln Leu Ile
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<400> 59

Glu Thr Tyr Val Thr Gly Gly Ala Ser Ala Arg Ser Thr Phe Thr Leu
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Val Gly Leu Phe Lys Gln Gly Ser Gln Gln Asn Ile Gln Leu Val
20 25 30

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Gln Thr Tyr Val Ser Gly Gly Ser Ser Gly Arg Thr Thr Ser Gly Leu
1 5 10 15

Val Ser Ile Phe Ser Pro Gly Ala Ser Gln Asn Leu Gln Leu Ile
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<400> 61

Glu Thr Tyr Val Ser Gly Gly Ala Ala Ala Gln Thr Thr Ala Arg Phe
1 5 10 15

Ala Gly Phe Phe Gln Ser Gly Ala Lys Gln Asn Ile Gln Leu Ile
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<400> 62

Glu Thr Tyr Val Ser Gly Gly Ser Ala Ala Gln Thr Thr Ala Gly Phe
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Val Arg Leu Phe Glu Thr Gly Pro Lys Gln Asn Ile Gln Leu Ile
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<400> 63

Ser Thr Tyr Val Ser Gly Gly Ala Gln Ala Arg Ala Ala Gln Gly Ile
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Thr Ser Leu Phe Ser Arg Gly Ser Ser Gln Lys Ile Gln Leu Val
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<400> 64

Ser Thr Tyr Val Thr Gly Gly Thr Gln Gly Arg Ala Ala Ser Gly Leu
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Thr Ser Leu Phe Ser Ala Gly Ala Ser Gln Asn Ile Gln Leu Ile
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<400> 65

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Thr Ala Leu Phe Ser Pro Gly Ala Ser Gln Asn Ile Gln Leu Ile
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<400> 66

Ser Thr Ile Val Ser Gly Gly Thr Val Ala Arg Thr Thr His Ser Leu
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Ala Ser Leu Phe Thr Gln Gly Ala Ser Gln Lys Ile Gln Leu Ile
20 25 30

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<400> 67

Glu Thr Tyr Thr Ser Gly Gly Ala Ala Ser His Thr Thr Ser Thr Leu
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Ala Ser Leu Phe Ser Pro Gly Ala Ser Gln Arg Ile Gln Leu Val
20 25 30

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<400> 68

His Thr Leu Thr Thr Gly Gly His Ala Ala Arg Leu Thr Ser Gly Phe
1 5 10 15

Ala Gly Leu Phe Thr Pro Gly Pro Ser Gln Arg Ile Gln Leu Ile
20 25 30

<210> 69
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<400> 69

Glu Thr Ile Val Ser Gly Gly Gln Ala Ala Arg Ala Met Ser Gly Leu
1 5 10 15

Val Ser Leu Phe Thr Pro Gly Ala Lys Gln Asn Ile Gln Leu Ile
20 25 30

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<400> 70

Glu Thr Tyr Thr Ser Gly Gly Asn Ala Gly His Thr Met Thr Gly Ile

1 5 10 15

Val Arg Phe Phe Ala Pro Gly Pro Lys Gln Asn Val His Leu Ile
 20 25 30

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<400> 71

Thr Thr Tyr Thr Thr Gly Gly Asn Ala Ala Arg Thr Thr Gln Ala Leu
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Thr Ser Phe Phe Ser Pro Gly Ala Lys Gln Asp Ile Gln Leu Ile
 20 25 30

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<400> 72

Glu Thr Tyr Thr Thr Gly Gly Ser Thr Ala Arg Thr Thr Gln Gly Leu
 1 5 10 15

Val Ser Leu Phe Ser Arg Gly Ala Lys Gln Asp Ile Gln Leu Ile
 20 25 30

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<400> 73

Ala Thr Tyr Thr Ser Gly Gly Ser Ala Ala Arg Thr Thr Gln Gly Phe
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Ala Ser Leu Phe Ser Leu Gly Ser Gln Gln Lys Ile Gln Leu Val
 20 25 30

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<400> 74

Ala Thr Tyr Thr Thr Gly Gly Ser Val Ala Arg Thr Thr His Gly Phe
1 5 10 15

Ser Ser Leu Phe Ser Gln Gly Ala Lys Gln Asn Ile Gln Leu Ile
20 25 30

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<400> 75

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1 5 10 15

Thr Ser Phe Phe Thr Gln Gly Pro Ala Gln Arg Ile Gln Leu Ile
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1 5 10 15

Val Gly Phe Leu Ser Pro Gly Pro Ser Gln Asn Ile Gln Leu Ile
20 25 30

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<400> 77

Thr Thr Tyr Val Ser Val Gly His Ala Ser Gln Thr Thr Arg Arg Val
1 5 10 15

Ala Ser Phe Phe Ser Pro Gly Ser Ala Gln Lys Ile Gln Leu Val
20 25 30

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<400> 78

Thr Thr Thr Val Ser Gly Gly His Ala Ser Gln Ile Thr Arg Gly Val
1 5 10 15

Thr Ser Phe Phe Ser Pro Gly Ser Ala Gln Lys Ile Gln Leu Val
20 25 30

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Thr Ala Leu Phe Ser Ser Gly Pro Ser Gln Arg Ile Gln Leu Ile
20 25 30

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1 5 10 15

Ala Gly Leu Phe Ser Ser Gly Pro Ser Gln Arg Ile Gln Leu Ile
20 25 30

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<400> 81

Val Thr Gln Val Ser Pro Pro Gln Ala Gly Tyr Thr Thr Ser Val Leu
1 5 10 15

Thr Gly Ile Leu Ser Pro Gly Ala Lys Gln Asn Ile Gln Leu Val
20 25 30

<210> 82
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<400> 82

Val Thr Gln Val Ser Gly Gly Gln Ala Gly Tyr Thr Thr Ser Val Leu
1 5 10 15

Thr Gly Ile Leu Ser Pro Gly Ala Lys Gln Asn Ile Gln Leu Val
20 25 30

<210> 83
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<400> 83

Gly Thr Tyr Thr Val Gly Gly Ala Ser Ala Phe Thr Thr Ser Arg Leu
1 5 10 15

Thr Ser Leu Phe Ala Leu Gly Pro Ser Gln Arg Ile Gln Leu Val
20 25 30

<210> 84
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<400> 84

Asn Thr His Thr Val Gly Gly Thr Glu Gly Phe Ala Thr Gln Arg Leu
1 5 10 15

Thr Ser Leu Phe Ala Leu Gly Pro Ser Gln Lys Ile Gln Leu Ile
20 25 30

<210> 85
<211> 31
<212> PRT
<213> Hepatitis C virus

<400> 85

Ser Thr Arg Thr Ala Gly Gly Ala Gln Ala Phe Asn Thr Tyr Gly Val
1 5 10 15

Ala Ser Ile Phe Ser Pro Gly Pro Ser Gln Arg Ile Gln Leu Val
20 25 30

<210> 86
<211> 31
<212> PRT
<213> Hepatitis C virus

<400> 86

Gln Thr His Thr Val Gly Gly Ser Thr Ala His Asn Ala Arg Thr Leu
1 5 10 15

Thr Gly Met Phe Ser Leu Gly Ala Arg Gln Lys Ile Gln Leu Ile
20 25 30

<210> 87
<211> 31
<212> PRT
<213> Hepatitis C virus

<400> 87

Asn Thr Arg Thr Val Ala Gly Ser Ala Ala Ala Thr Thr Arg Gly Phe
1 5 10 15

Thr Ser Met Phe Ser Ser Gly Ser Lys Gln Asn Leu Gln Leu Ile
20 25 30

<210> 88
<211> 31
<212> PRT
<213> Hepatitis C virus

<400> 88

Gln Thr Arg Thr Val Gly Gly Gln Val Gly His Ser Val Arg Gly Phe
1 5 10 15

Thr Ser Leu Phe Ser Ala Gly Ser Ala Gln Asn Ile Gln Leu Ile
20 25 30

<210> 89
<211> 31
<212> PRT
<213> Hepatitis C virus

<400> 89

Glu Thr His Thr Thr Gly Ala Val Ser Gly His Thr Thr Asn Val Leu

1	5	10	15
Thr Ser Leu Phe Ser Ser Gly Ser Ser Gln Asn Ile Gln Leu Ile			
	20	25	30

<210> 90
 <211> 31
 <212> PRT
 <213> Hepatitis C virus

<400> 90

Val Thr Arg Thr Thr Gly Glu Val Ala Ala Arg Thr Ala Asn Thr Phe
1 5 10 15

Ala Ser Leu Phe Thr Thr Gly Pro Ser Gln Asn Ile Gln Leu Ile
20 25 30

<210> 91
 <211> 31
 <212> PRT
 <213> Hepatitis C virus

<400> 91

Thr Thr Tyr Ser Ser Gly Gln Glu Ala Gly Arg Thr Val Ala Gly Phe
1 5 10 15

Ala Gly Leu Phe Thr Thr Gly Ala Lys Gln Asn Leu Tyr Leu Ile
20 25 30

<210> 92
 <211> 31
 <212> PRT
 <213> Hepatitis C virus

<400> 92

Ser Thr Ser Val Val Gly Gly Arg Gln Ala Ser Ala Thr Phe Arg Phe
1 5 10 15

Thr Ser Phe Phe Ser Arg Gly Pro Thr Gln Glu Ile Lys Leu Ile
20 25 30

<210> 93
 <211> 31
 <212> PRT
 <213> Hepatitis C virus

<400> 93

Asn Thr Tyr Thr Thr Ala Gly Ser Met Ala Gln Ser Ile Tyr Arg Leu
1 5 10 15

Thr Asp Ile Phe Ser Thr Gly Pro Ser Gln Lys Leu Gln Leu Val
20 25 30

<210> 94

<211> 31

<212> PRT

<213> Hepatitis C virus

<400> 94

Arg Thr Ile Leu Met Ala Gly Arg Gln Ala Glu Val Thr Gln Ser Phe
1 5 10 15

Pro Gly Leu Phe Ser Leu Ala Pro Ser Gln Lys Ile His Leu Ile
20 25 30

<210> 95

<211> 31

<212> PRT

<213> Hepatitis C virus

<400> 95

Asp Thr Tyr Ala Thr Gly Gly Ser Val Ala Ser Ile Met Ala Gly Ile
1 5 10 15

Ala Arg Phe Phe Ser Pro Gly Ala Arg Gln Asp Ile Gln Leu Ile
20 25 30

<210> 96

<211> 30

<212> PRT

<213> Hepatitis C virus

<400> 96

Glu Thr Tyr Ala Thr Gly Ala Ser Ala Gly His Asp Val Ser Ser Phe
1 5 10 15

Ala Arg Leu Phe Ala Pro Gly Ala Arg Gln Asn Ile Gln Ile
20 25 30

<210> 97

<211> 31

<212> PRT
<213> Hepatitis C virus

<400> 97

Glu Thr His Arg Thr Gly Gly Ser Ala Ala Arg Ser Thr Ala Gly Val
1 5 10 15

Ala Ser Leu Phe Thr Pro Gly Ala Arg Gln Asn Ile Gln Leu Ile
20 25 30

<210> 98
<211> 31
<212> PRT
<213> Hepatitis C virus

<400> 98

Asn Thr Arg Ala Val Gly Met Val Gln Ser Arg Thr Thr Tyr Ala Leu
1 5 10 15

Thr Ser Leu Phe Asp Ser Gly Ala Ala Gln Lys Leu Gln Leu Val
20 25 30

<210> 99
<211> 31
<212> PRT
<213> Hepatitis C virus

<400> 99

Glu Thr His Val Thr Gly Gly Ser Ala Gly Arg Thr Thr Ala Gly Leu
1 5 10 15

Val Gly Leu Leu Thr Pro Gly Ala Lys Gln Asn Ile Gln Leu Ile
20 25 30

<210> 100
<211> 31
<212> PRT
<213> Hepatitis C virus

<400> 100

Glu Thr His Val Thr Gly Gly Ser Ala Gly Arg Ser Val Leu Gly Ile
1 5 10 15

Ala Ser Phe Leu Thr Arg Gly Pro Lys Gln Asn Ile Gln Leu Ile
20 25 30

<210> 101
<211> 31
<212> PRT
<213> Hepatitis C virus

<400> 101

Glu Thr Tyr Thr Ser Gly Gly Ala Ala Ser His Thr Thr Ser Thr Leu
1 5 10 15

Ala Ser Leu Phe Ser Pro Gly Ala Ser Gln Arg Ile Gln Leu Val
20 25 30

<210> 102
<211> 31
<212> PRT
<213> Hepatitis C virus

<400> 102

Ala Thr Tyr Thr Ser Gly Gly Val Ala Ser His Thr Thr Ser Arg Phe
1 5 10 15

Thr Ser Leu Phe Ser Ser Gly Ala Ser Gln Arg Ile Gln Leu Val
20 25 30

<210> 103
<211> 31
<212> PRT
<213> Hepatitis C virus

<400> 103

Ala Thr Tyr Thr Ser Gly Ala Val Ala Ser His Thr Thr Ser Arg Phe
1 5 10 15

Thr Ser Phe Phe Ser Ser Gly Ala Ser Gln Arg Ile Gln Leu Val
20 25 30

<210> 104
<211> 31
<212> PRT
<213> Hepatitis C virus

<400> 104

Ala Thr Tyr Thr Ser Gly Ala Val Ala Ser His Thr Thr Ser Arg Phe
1 5 10 15

Thr Ser Leu Phe Ser Ser Gly Ala Ser Gln Arg Ile Gln Leu Val
20 25 30

<210> 105
<211> 31
<212> PRT
<213> Hepatitis C virus

<400> 105

Ala Thr Tyr Thr Ser Gly Ala Val Ala Ser His Thr Thr Ser Gly Phe
1 5 10 15

Thr Ser Leu Phe Ser Ser Gly Ala Ser Gln Arg Ile Gln Leu Val
20 25 30

<210> 106
<211> 31
<212> PRT
<213> Hepatitis C virus

<400> 106

Glu Thr Tyr Thr Ser Gly Arg Val Ala Gly His Thr Thr Ser Gly Phe
1 5 10 15

Thr Ser Leu Phe Ser Ser Gly Ala Ser Gln Arg Ile Gln Leu Val
20 25 30

<210> 107
<211> 31
<212> PRT
<213> Hepatitis C virus

<400> 107

Ala Thr Tyr Thr Ser Gly Gly Val Ala Gly Arg Thr Thr Ser Gly Phe
1 5 10 15

Thr Ser Leu Phe Ser Ser Gly Ala Ser Gln Lys Ile Gln Leu Val
20 25 30

<210> 108
<211> 31
<212> PRT
<213> Hepatitis C virus

<400> 108

Glu Thr His Thr Thr Gly Arg Val Ala Gly His Thr Thr Ser Arg Phe

1 5 10 15

Thr Ser Leu Phe Ser Ser Gly Ala Ser Gln Lys Ile Gln Leu Val
 20 25 30

<210> 109
 <211> 31
 <212> PRT
 <213> Hepatitis C virus
 <400> 109

Glu Thr His Thr Thr Gly Arg Val Val Gly His Thr Thr Ser Gly Phe
 1 5 10 15

Thr Ser Leu Phe Ser Ser Gly Ala Ser Gln Lys Ile Gln Leu Val
 20 25 30

<210> 110
 <211> 31
 <212> PRT
 <213> Hepatitis C virus
 <400> 110

Glu Thr His Thr Thr Gly Arg Val Ala Gly Arg Thr Thr Ser Gly Phe
 1 5 10 15

Thr Ser Leu Phe Ser Ser Gly Ala Ser Gln Lys Ile Gln Leu Val
 20 25 30

<210> 111
 <211> 31
 <212> PRT
 <213> Hepatitis C virus
 <400> 111

Thr Thr Tyr Thr Ser Gly Gly Val Ala Gly Arg Thr Thr Ser Gly Phe
 1 5 10 15

Thr Ser Leu Phe Ser Ser Gly Ala Ser Gln Lys Ile Gln Leu Val
 20 25 30

<210> 112
 <211> 31
 <212> PRT
 <213> Hepatitis C virus

<400> 112

Lys Thr Tyr Thr Ser Gly Gly Ala Ala Ser His Thr Thr Ser Arg Phe
1 5 10 15

Thr Ser Leu Phe Ser Pro Gly Ala Ser Gln Arg Ile Gln Leu Val
20 25 30

<210> 113

<211> 31

<212> PRT

<213> Hepatitis C virus

<400> 113

Ser Thr Arg Val Thr Gly Gly Gln Gln Gly Arg Ala Val His Gly Ile
1 5 10 15

Ala Ser Leu Phe Ser Leu Gly Ala Ser Gln Lys Ile Gln Leu Val
20 25 30

<210> 114

<211> 31

<212> PRT

<213> Hepatitis C virus

<400> 114

Ser Thr Arg Val Thr Gly Gly Gln Gln Gly Arg Ala Val Gln Gly Phe
1 5 10 15

Ala Ser Leu Phe Arg Leu Gly Ala Ser Gln Glu Ile Gln Leu Val
20 25 30

<210> 115

<211> 31

<212> PRT

<213> Hepatitis C virus

<400> 115

Ser Thr Arg Val Thr Gly Gly Gln Gln Gly Arg Ala Val His Gly Ile
1 5 10 15

Ala Ser Leu Phe Ser Leu Gly Ala Ser Gln Lys Asn Gln Leu Val
20 25 30

<210> 116

<211> 31

<212> PRT
<213> Hepatitis C virus

<400> 116

Ser Thr Arg Val Thr Gly Gly Gln Gln Gly His Ala Ala His Ser Leu
1 5 10 15

Thr Ser Leu Phe Arg Leu Gly Ala Ser Gln Asn Ile Gln Leu Val
20 25 30

<210> 117
<211> 31
<212> PRT
<213> Hepatitis C virus

<400> 117

Asn Thr Arg Val Thr Gly Gly Arg Gln Gly Arg Ala Ala His Ser Leu
1 5 10 15

Thr Ser Leu Phe Ser Pro Gly Ala Ser Gln Asn Ile Gln Leu Val
20 25 30

<210> 118
<211> 31
<212> PRT
<213> Hepatitis C virus

<400> 118

Gly Thr Arg Val Thr Gly Gly Arg Gln Gly Arg Ala Ala His Ser Leu
1 5 10 15

Thr Ser Leu Phe Ser Pro Gly Ala Ser Glu Asn Ile Arg Leu Val
20 25 30

<210> 119
<211> 31
<212> PRT
<213> Hepatitis C virus

<400> 119

Ser Thr Arg Val Ser Gly Gly Gln Gln Gly Arg Ala Ala His Ser Leu
1 5 10 15

Thr Ser Leu Phe Thr Leu Gly Ala Ser Gln Asn Ile Gln Leu Val
20 25 30

<210> 120
 <211> 31
 <212> PRT
 <213> Hepatitis C virus

<400> 120

Ser Thr His Val Thr Gly Ala Leu Gln Gly Arg Ala Ala Tyr Gly Ile
 1 5 10 15

Thr Ser Phe Leu Ser His Gly Pro Ser Gln Lys Ile Gln Leu Val
 20 25 30

<210> 121
 <211> 31
 <212> PRT
 <213> Hepatitis C virus

<400> 121

Ser Thr Gln Val Met Gly Gly Gln Gln Gly Arg Ala Ala Tyr Ser Leu
 1 5 10 15

Ala Ser Leu Leu Ser Pro Gly Ala Asn Gln Lys Ile Gln Leu Val
 20 25 30

<210> 122
 <211> 31
 <212> PRT
 <213> Hepatitis C virus

<400> 122

Ser Thr Gln Val Met Gly Gly Gln Gln Gly Arg Ala Ala Tyr Ser Leu
 1 5 10 15

Ala Ser Leu Leu Gly Pro Gly Ala Ser Gln Lys Ile Gln Leu Val
 20 25 30

<210> 123
 <211> 31
 <212> PRT
 <213> Hepatitis C virus

<400> 123

Ser Thr Gln Val Met Gly Gly Gln Gln Gly Arg Ala Ala Tyr Ser Leu
 1 5 10 15

Ala Ser Leu Leu Ser Pro Gly Ala Ser Gln Lys Ile Gln Leu Val
 20 25 30

<210> 124
 <211> 31
 <212> PRT
 <213> Hepatitis C virus

<400> 124

Arg Thr Arg Thr Val Gly Gly Gln Val Gly His Ser Val Arg Gly Phe
 1 5 10 15

Thr Ser Leu Phe Ser Ala Gly Ser Ala Gln Asn Ile Gln Leu Ile
 20 25 30

<210> 125
 <211> 31
 <212> PRT
 <213> Hepatitis C virus

<400> 125

Gln Thr Arg Thr Val Gly Gly Gln Val Gly His Ser Val Arg Gly Phe
 1 5 10 15

Thr Ser Leu Phe Ser Ala Gly Ser Ala Gln Asn Ile Gln Leu Ile
 20 25 30

<210> 126
 <211> 31
 <212> PRT
 <213> Hepatitis C virus

<400> 126

Gln Thr Arg Thr Val Gly Gly Gln Val Gly His Ser Val Arg Gly Phe
 1 5 10 15

Thr Ser Leu Phe Ser Ala Gly Ser Ala Gln Asp Ile Gln Leu Ile
 20 25 30

<210> 127
 <211> 31
 <212> PRT
 <213> Hepatitis C virus

<400> 127

Gln Thr Arg Thr Val Gly Gly Gln Val Gly His Ser Val Arg Gly Phe

1 5 10 15

Thr Ser Leu Leu Ser Ala Gly Ser Ala Gln Asn Ile Gln Leu Ile
 20 25 30

<210> 128
 <211> 31
 <212> PRT
 <213> Hepatitis C virus
 <400> 128

Gln Thr Arg Thr Val Gly Gly Gln Val Gly His Ser Val Arg Gly Leu
 1 5 10 15

Thr Ser Leu Phe Ser Ala Gly Ser Ala Gln Asn Ile Gln Leu Ile
 20 25 30

<210> 129
 <211> 31
 <212> PRT
 <213> Hepatitis C virus
 <400> 129

Gln Thr Arg Thr Val Gly Gly Gln Met Gly His Gly Val Arg Gly Leu
 1 5 10 15

Thr Ser Leu Phe Ser Ala Gly Ser Ala Arg Asn Ile Gln Leu Ile
 20 25 30

<210> 130
 <211> 31
 <212> PRT
 <213> Hepatitis C virus
 <400> 130

Gln Thr His Thr Val Gly Gly Gln Met Gly His Gly Val Arg Gly Leu
 1 5 10 15

Thr Ser Leu Phe Ser Ala Gly Ser Ala Gln Asn Ile Gln Leu Ile
 20 25 30

<210> 131
 <211> 31
 <212> PRT
 <213> Hepatitis C virus

<400> 131

Gln Thr His Thr Val Gly Gly Gln Met Gly His Gly Val Arg Gly Leu
1 5 10 15

Thr Asn Leu Phe Ser Ala Gly Ser Ala Gln Asn Ile Gln Leu Ile
20 25 30

<210> 132

<211> 24

<212> PRT

<213> Hepatitis C virus

<400> 132

Glu Thr His Val Thr Gly Gly Ser Ala Gly His Thr Val Ser Gly Phe
1 5 10 15

Val Ser Leu Leu Ala Pro Gly Ala
20

<210> 133

<211> 31

<212> PRT

<213> Hepatitis C virus

<220>

<221> MOD_RES

<222> (1)..(1)

<223> 2-amino heptanoic (Ahe) butyl alanine

<400> 133

Xaa Glu Thr His Val Thr Gly Gly Ser Ala Gly His Thr Val Ser Gly
1 5 10 15

Phe Val Ser Leu Leu Ala Pro Gly Ala Lys Gln Asn Val Gln Leu
20 25 30

<210> 134

<211> 6

<212> PRT

<213> Hepatitis C virus

<220>

<221> misc_feature

<222> (4)..(5)

<223> Xaa can be any naturally occurring amino acid

<400> 134

Ser Leu Phe Xaa Xaa Gly
1 5